

# PATENT SPECIFICATION

DRAWINGS ATTACHED

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996,233



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## COMPLETE SPECIFICATION

### Improvements in or relating to Door Mounting Structures

We, MOFFATS LIMITED, a Company incorporated under the laws of Canada, of Weston, Ontario, Canada, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to door mounting structure and, in particular, to structure suitable for mounting an oven door in a domestic cooking stove.

The invention has particular application to the mounting of doors in ovens which are mounted above the normal cooking surface of a stove so that the oven is, in effect, a separate self-contained enclosure at approximately eye-level.

In stoves of this general kind, the door, if it were hinged in a normal or conventional manner, would present an awkward obstruction and would detract from the efficient use of the oven. Accordingly, it is a primary object of the present invention to provide door mounting structure which will enable the door, when in the open position, to be moved into a recessed storage position so that it is out of the way and does not hinder ready and convenient access to the oven.

According to the present invention there is provided door mounting structure comprising two spaced, vertical, parallel walls defining two sides of an opening to be closed by a door, an L-shaped groove in each wall, each groove opening towards the opposite wall and comprising a vertical portion parallel to and spaced from the vertical front edge of the wall and a horizontal portion parallel to and spaced from the horizontal lower edge of the wall, whereof the horizontal portion is provided with a depression in the lower

surface thereof directly beneath the vertical portion of the groove, two mounting elements extending laterally from each side of the door and spaced apart a distance no greater than the length of the vertical portion of the grooves so as to be received in the grooves and to mount the door within the opening, the mounting elements being adapted to traverse the grooves from a first closed position in which both mounting elements on each side of the door are in vertical portions of the grooves and wherein one of the mounting elements engages with the slight depression in the horizontal portion to releasably hold the door to a second open position in which both mounting elements on each side of the door are in the horizontal portions of the grooves.

A preferred embodiment of the present invention will now be described by way of example with reference to the accompanying drawings in which like reference numerals denote like parts in the various views and in which:

Figure 1 is a perspective view, partly cut away, showing the door mounting structure of the present invention;

Figure 2 is a section view taken along a vertical plane through a portion of Figure 1;

Figure 3 is a section view taken along line 3—3 of Figure 2; and

Figure 4 is a detailed cut-away view showing a portion of the structure disclosed in Figure 1.

Referring in detail to the drawings and, in particular, to Figure 1, the invention is illustrated as embodied in an oven structure indicated generally by the reference numeral 10. The oven structure comprises two spaced, vertical, parallel walls 11 and 12 defining two sides of an opening which is to

[Price 4s. 6d.]

be closed by a door. A top wall 13 and a bottom wall 14 completes the enclosure. The walls will normally comprise two skins between which is provided insulating material. This may be readily seen in Figure 2 where the outer skin 13a is shown as lying in spaced relationship with the inner skin 13b with insulating material 14 occupying the space between the two skins. Similar construction may be seen in Figure 1 associated with the wall 12.

Within the oven enclosure, suitable heating means such as the electric element 15 seen in Figure 1 may be provided and conventional supports such as that illustrated at 16 may be provided in order to support a rack within the oven in a known manner.

The oven illustrated in Figure 1 is also provided with a secondary housing 17 adjacent the oven and on the front face 18 of this housing there may be mounted suitable controls, all in accordance with known practices.

Each of the side walls 11 and 12 is provided with an L-shaped groove 19 comprising a first vertical portion 20 lying parallel to and spaced from the vertical front edge 11a of the wall 11, and a second horizontal portion 21 lying spaced from and parallel to the horizontal lower edge of the wall. Conveniently, the grooves 19 may be stamped into the sheet metal material constituting the walls 11 and 12, or, alternatively, any other convenient form of construction may be employed.

The door 22 is provided with a handle portion 23 and, on the inner surface of the door, two mounting brackets 24 are provided which, in turn, carry a pair of mounting elements 25. The mounting elements 25 comprise rollers mounted for rotation upon stub shafts 26 which are carried by flange 24a of each mounting bracket 24.

As can be seen in Figure 1, the mounting elements or rollers 25 are adapted to be received in the grooves carried by the walls 11 and 12 and support the door in such a manner that the mounting elements may be caused to traverse the grooves 19 so that the door may move from the first, closed, vertical position as shown in solid lines in Figure 2 to the second, horizontal, open position shown in Figure 1. One of the intermediate positions occupied by the door is shown in dotted lines in Figure 2.

It is apparent that the distance separating the two mounting elements or rollers 25 on each side of the door must not exceed the length of the vertical portion 20 of the grooves 19 and, in practice, the portion 20 of the groove 19 is made slightly longer than the distance separating the two mounting elements 25 for reasons which will now be described.

In order to retain the door in its vertical,

closed position, detent means are provided which will releasably hold the door in that position. These detent means comprise a slight depression 27 in the lower surface 21a (Figs. 1 and 4) of the horizontal portions 21 of the grooves 19, the depressions 27 lying immediately beneath the vertical portions 20 of said grooves. The depressions 27 may readily be seen in Figures 1 and 4.

Thus, when the door is moved into its vertical, closed position, the lower mounting element or roller 25 will, as the door reaches the vertical position, drop into the recess 27 and be held thereby gravity acting upon the door 22. The door will, accordingly be retained in the vertical, closed position. In order to open the door, it is merely necessary to exert a slight upward pressure upon the handle portion 23 while, at the same time, pulling the handle portion outwardly away from the oven so as to cause the door to begin its movement towards the horizontal position in a manner which is apparent from Figure 2.

A consideration of Figure 1 will also make it apparent that the lower horizontal portion 21 of the grooves 19 is formed appreciably longer than the vertical portion 20 and, accordingly, when the door occupies the horizontal position, it may be slid rearwardly along the horizontal portion 21 until it occupies a recessed storage position.

From the foregoing description it will be apparent that the invention provides a simple, economical and efficient mounting structure for a door in which the door may be releasably retained in a closed position and which, when the door is in the open position, enables the door to be stored in a recessed position so that it does not hinder convenient access to the interior of the oven.

#### WHAT WE CLAIM IS:—

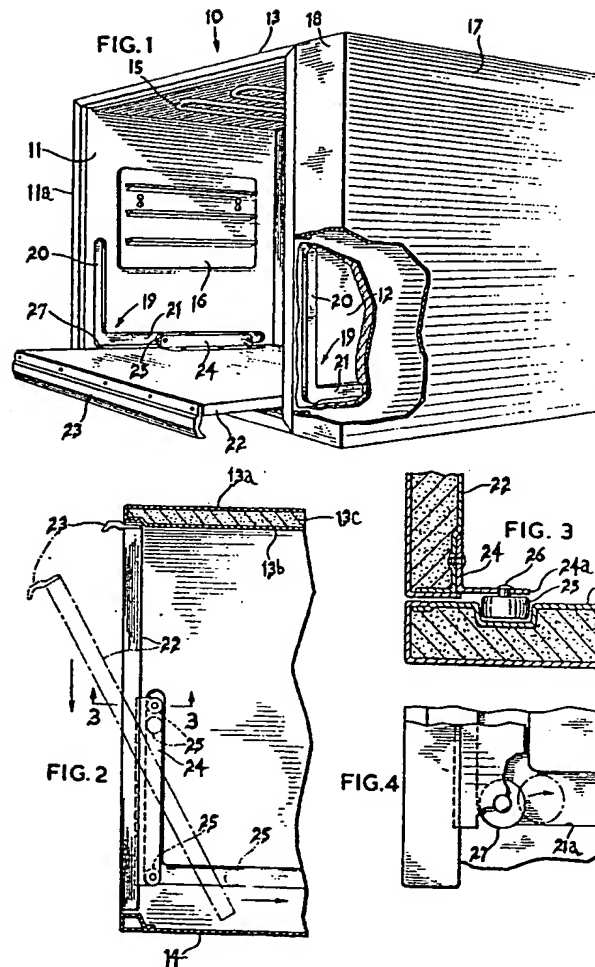
1. Door mounting structure comprising two spaced, vertical, parallel walls defining two sides of an opening to be closed by a door, an L-shaped groove in each wall, each groove opening towards the opposite wall and comprising a vertical portion parallel to and spaced from the vertical front edge of the wall and a horizontal portion parallel to and spaced from the horizontal lower edge of the wall, whereof the horizontal portion is provided with a depression in the lower surface thereof directly beneath the vertical portion of the groove, two mounting elements extending laterally from each side of the door and spaced apart a distance no greater than the length of the vertical portion of the grooves so as to be received in the grooves and to mount the door within the opening, the mounting elements being adapted to traverse the grooves from a first closed position in which both mounting elements on each side of the door are in vertical portions of the

- 5 grooves and wherein one of the mounting elements engages with the slight depression in the horizontal portion to releasably hold the door to a second open position in which both mounting elements on each side of the door are in the horizontal portions of the grooves.
- 10 2. Door mounting structure as claimed in claim 1 wherein the horizontal portion of each groove is longer than the vertical portion so that when the door has reached a horizontal position with both mounting elements in the horizontal portions of the grooves, the door may be slid rearwardly
- 15 along the horizontal portions of the grooves to a recessed storage position.
3. Door mounting structure as claimed in claim 1 wherein the mounting elements carried by the door are rollers mounted for rotation on stub shafts carried by the door, the rollers being adapted to be received in the grooves. 20
4. Door mounting structure substantially as described and as illustrated in the accompanying drawings. 25

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# PATENT SPECIFICATION

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(52) Index at acceptance

A4D 5



## (54) DETACHABLE FORK ROTISSERIE ASSEMBLY

(71) I, ADOLPHE HENRY ALEXANDER LASKER, of 426 Scotia Street, Winnipeg 17, Manitoba, Canada, a Canadian citizen, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to improvements in food carrying units for rotisserie assemblies and to assemblies which include such units.

The device is for use primarily with relatively small items of food such as kebabs and the like. It is conventional to have a single disc attachable to a rotisserie rod with a plurality of prongs or tines extending upon one or both sides of this disc upon which items such as hot dogs or kebab type of food may be placed.

The disadvantage of this single disc type of device is the fact that the individual tines carrying food cannot be removed so that the entire device has to be removed when it is desired to remove the food. While this may be satisfactory in some instances, in many other instances personal preference dictates the removal of food at different degrees of cooking. For example, small squares of steak or the like being barbecued, some people prefer such items to be rare, others medium rare, and yet others prefer them to be well done. If the relatively long forks are used upon a horizontal grill then, of course, they can be removed individually but this is not a satisfactory method of cooking such items, it being well known that rotisserie style cooking is more efficient and flavorful.

The present device overcomes these disadvantages by providing a pair of discs attachable to a rotisserie spindle in spaced and parallel relationship. I have provided a plurality of food-carrying tines, the distal ends of which may engage an aperture adjacent the perimeter of one of the discs and the inner end may engage a slot in the perimeter and be held in position by an extension engaging a further aperture. This

means that it is locked firmly in place and can be removed individually by the operator as desired.

According to the invention I provide a food-carrying unit for a rotisserie assembly, the food-carrying unit comprising a first elongated food-engaging tine, a handle at one end of the said tine, and a second tine extending from the handle parallel to the first tine and spaced therefrom, the second tine being shorter than the first tine.

According to a further feature of the invention I also provide a rotisserie assembly including a main rotatable spindle, a pair of support plates detachably attachable to the spindle in spaced and parallel relationship, and two or more food-carrying units detachably attachable to the support plates so that the food-carrying units extend between the support plates, each food-carrying unit comprising a first elongated food-engaging tine adapted to engage both support plates, a handle at one end of the said tine, and a second tine extending from the handle parallel to the first tine and spaced therefrom, the second tine being shorter than the first tine and adapted to engage only one of the support plates.

The invention will now be described by way of example and with reference to the accompanying figures in which:—

Figure 1 is a side elevation of the device in place upon a rotisserie spindle.

Figure 2 is a section along the line 2—2 of Figure 1.

Figure 3 is a half section along the line 3—3 of Figure 1.

Figure 4 is a side elevation of one of the first food-carrying tines *per se*, the handle, and the second tine.

In the drawings like characters of reference indicate corresponding parts in the different figures.

Proceeding therefore to describe the invention in detail, reference character 10 illustrates a conventional rotisserie spindle which is usually of square configuration to facilitate the engagement of food thereon.

[Price 25p]

This embodiment includes a pair of plates or discs 11 and 12 each of which is provided with a centrally located hub 13 and a thumb screw 14 screw-threadably engage-  
5 able through the wall of the hub 13. These hubs may be slid over the spindle 10 and the screws tightened thus locking the discs firmly to the shaft or spindle 10.

Disc 11 is provided with a plurality of  
10 apertures 15 formed in spaced relationship around a circle spaced just inboard from the periphery or perimeter 16 of the disc 11 and these apertures are preferably of square cross-section, and of course can  
15 be of any cross-sectional area.

The other disc 12 is provided with a plurality of open-ended slots 17 extending radially inwardly from the perimeter 18 a relatively short distance as clearly shown  
20 in Figure 3. Inboard of these slots 17 is a plurality of corresponding apertures 19 similar to apertures 15 hereinbefore described.

The food-carrying units collectively  
25 designated 20 each consist of a first elongated food-engaging tine 21, one end 22 of which is angulated as at 23. It then angulates outwardly parallel to the first tine 21 as at 24 and is formed in a circular  
30 loop 25 as clearly shown in Figure 4 thus forming a handle portion collectively designated 26. The end then runs parallel to the portion 24 as indicated at 24' whereupon it angulates substantially at right angles as  
35 at 27 and then terminates in a second tine 28 which is spaced and parallel to the first tine 21, but is only of relatively short length as clearly shown.

In operation, the discs are secured to  
40 the spindle in spaced and parallel relationship as shown in Figure 1. The food is loaded upon the first tine 21 by piercing the tine therethrough whereupon the distal end 29 is engaged within one of the apertures  
45 15 of the disc 11. The other end of the tine approximately indicated by reference character 30 is then engaged within the open-ended slot 17 and the entire tine assembly except for the distal end 29 is  
50 moved towards the disc 11 so that the second tine 28 engages the apertures 19 at which time the portion of the first tine 21 indicated by reference character 31 is en-  
55 gaging the open-ended slots 17. This holds the tine assembly or food unit upon the discs until it is desired to remove same at which time it is merely necessary to move the units 20 rightwardly with respect  
60 to Figure 1 so that the second tine 28 disengages from the apertures 19 whereupon the units 20 can be lifted clear of the slots 17 and withdrawn from the aper-

tures 15 without interfering with the remainder of the food-carrying units.

#### WHAT I CLAIM IS:—

1. A food-carrying unit for a rotisserie  
65 assembly, the food-carrying unit comprising a first elongated food-engaging tine, a handle at one end of said tine, and a  
70 second tine extending from the handle parallel to the first tine and spaced therefrom, the second tine being shorter than the first tine.

2. A rotisserie assembly including a  
75 main rotatable spindle, a pair of support plates detachably attachable to the spindle in spaced and parallel relationship, and two or more food-carrying units detachably  
80 attachable to the support plates so that the food-carrying units extend between the support plates, each food-carrying unit comprising an elongated first food-carrying  
85 tine adapted to engage both support plates, a handle at one end of the tine, and a second tine extending from the handle parallel to the first tine and spaced therefrom, the  
90 second tine being shorter than the first tine and adapted to engage only one of the support plates.

3. A rotisserie assembly according to  
90 claim 2 wherein each support plate is a disc having a hole at its centre for receiving the main rotatable spindle.

4. A rotisserie assembly according to  
95 either of claims 2 and 3 wherein the food-carrying units are attachable to the discs at points adjacent their perimeters.

5. A rotisserie assembly according to  
100 claim 3 in which one of the discs is provided with a plurality of equally spaced apertures adjacent the perimeter thereof, the other of the discs having a plurality  
105 of open-ended slots extending inwardly from the perimeter in equal spaced arrangement around the perimeter and a corresponding number of apertures formed be-  
110 tween the slots and the centre of the disc, each first, food-carrying tine being adapted to engage an aperture in said one disc and to engage an open-ended slot in said  
other disc and each second tine being adapted to engage an aperture in the other disc.

6. A rotisserie assembly substantially as  
115 herein described with reference to the accompanying drawings.

7. A food-carrying unit substantially as  
herein described with reference to the accompanying drawings.

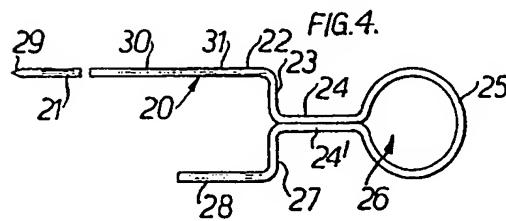
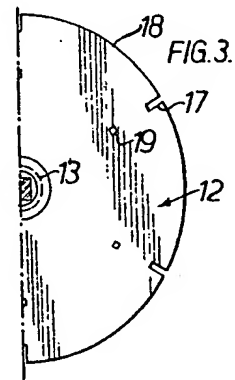
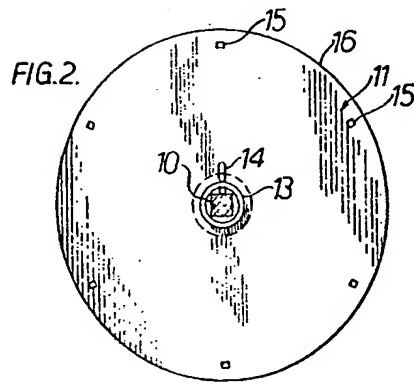
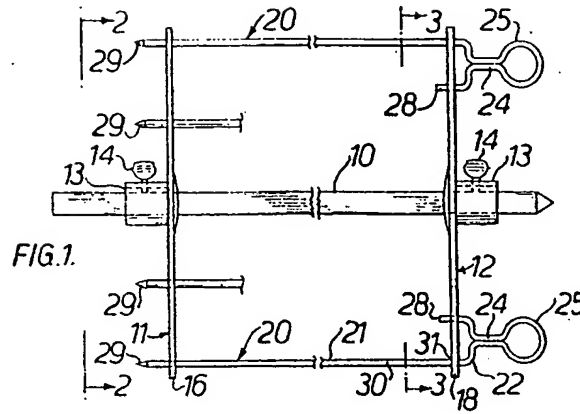
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## ⑫ 公開特許公報(A)

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F 24 C 15/04

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審査請求 未請求 発明の数 1 (全5頁)

⑭ 発明の名称 調理器の扉構成

⑮ 特 願 昭59-140950

⑯ 出 願 昭59(1984)7月6日

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## 明 細 書

## 1. 発明の名称

調理器の扉構成

## 2. 特許請求の範囲

1. 表板の外周を後方に折曲して形成した外周枠のうち上部および両側外周枠にさらに前記表板と平行方向へ折曲した折曲片および係止爪を設けるとともに、前記表板の中央部に内周縁が後方に縁立つ開口を設けた表扉部材と、裏板の上部中央部と下部に前方に折曲する折曲片を設け、かつ前記裏板の上部両側部から立上る押さえ片を設けるとともに、前記表扉部材の下部に嵌合してこの表扉部材の係止爪によって保持される裏扉部材と、前記表扉部材の折曲片および開口縁立部と前記裏扉部材の上部折曲片および押さえ片との間において介装固定されるガラス板とを備えた扉を構成し、この扉を前記裏扉部材を貫通して設けたリンク軸を介して調理器の調理室前部開口に開閉自在に取付けた調理器の扉構成。

## 3. 発明の詳細な説明

## 産業上の利用分野

本発明は調理器の調理室前部開口を開閉するための扉の構成に関するものである。

## 従来例の構成とその問題点

第1図に従来の調理器の扉構成を示す。図において、1は調理器、2は調理器1の外筐体で、左右一对の側板3と、外板4等から構成されている。5は外筐体2内に組込まれた内筐体で、左右一对の横板6と、反射板(背板)7と、底板(図示せず)等から構成され、前面に開口を有する調理室9を形成している。10は調理室9の中に設けられた網棚で、その両側を横板6に設けたガイド溝11に挿入して、前後に摺動自在とされている。12は調理室9の前部開口に開閉自在に取付けられた扉、13は扉12の両側部と網棚10の両側部とを連結する左右一对のリンク金具で、扉12を開けるとこのリンク金具13を介して網棚10が前方に引き出される構成となっている。なお、網棚10の上下には発熱体(図示せず)が配設されている。



第2図、第3図に扉12の詳細を示す。図において、14は表扉部材で、表板15の外周を後方に折曲して外周枠16を形成するとともに、表板15の中央部に内周縁が後方に縁立つ開口17を設けることにより構成されている。18は裏扉部材で、裏板19の外周を表扉部材14の外周枠16に内嵌させるために前方に折曲するとともに、裏板19の中央部に内周縁が前方に縁立つ開口20を設けることによって構成されている。この場合、裏板19の開口20は、コーナー部が浅く、その他の部分が深目の縁立とされている。また、コーナー部にはアールが付けられている。21は表扉部材14の開口17縁立部と裏扉部材18の開口20内周面間に介装固定されたガラス板、22は表扉部材14と裏扉部材18の上部を貫通して両者を一体化するねじで、表扉部材14から飛び出した部分に把手23が取付けられている。なお、表扉部材14と裏扉部材18の下部には係止孔とこれに噛み合う爪（共に図示せず）が相対向して設けられ、前記ねじ22と共に図示するように図られている。24は裏扉部材18を貫通して設けられたリン

ク軸で、扉12はこのリンク軸24を介して調理室9の前部開口に取付けられている。

しかしながら、このような従来の調理器1の扉12の構成によると、裏扉部材18の開口20の上下、両側部でガラス板21を押さえているので、開口20を大きく取ると、裏扉部材18の強度が弱くなるという問題があった。したがって、表および裏扉部材14、18の開口17、20を大きくとることができず、外部から調理室9内を見るときの透視面積が小さいものであった。また、裏扉部材18は表扉部材14と略同等の広さの部材を必要とし、材料費が高つくという問題があった。

#### 発明の目的

本発明は上記従来の問題を解消するもので、調理室内が見やすくても安価に製作することのできる調理器の扉構成を提供することを目的とする。

#### 発明の構成

本発明の調理器の扉構成は、表板の外周を後方に折曲して形成した外周枠のうち上部および両側

外周枠にさらに前記表板と平行方向へ折曲した折曲片および係止爪を設けるとともに、前記表板の中央部に内周縁が後方に縁立つ開口を設けた表扉部材と、裏板の上部中央部と下部に前方に折曲する折曲片を設け、かつ前記裏板の上部両側部から立上る押さえ片を設けるとともに、前記表扉部材の下部に嵌合してこの表扉部材の係止爪によって保持される裏扉部材と、前記表扉部材の折曲片および開口縁立部と前記裏扉部材の上部折曲片および押さえ片との間において介装固定されるガラス板とを備えた扉を構成し、この扉を前記裏扉部材を貫通して設けたリンク軸を介して調理器の調理室前部開口に開閉自在に取付ける構成としたものであり、これにより、表扉部材の開口を大きく取って調理室内を見やすくすることができるとともに、安価に扉を製作することができるものである。

#### 実施例の説明

以下、本発明の一実施例について図面に基づいて説明する。なお、第1図に示したものと同一構成のものは同一番号を付して説明を省略する。

第4図～第7図において、25は調理室9の前部開口に開閉自在に取付けられた本発明に係る扉、26はこの扉25の表扉部材で、表板27の外周を後方に折曲して形成した外周枠28のうち上部および両側外周枠にさらに前記表板27と平行方向へ折曲した折曲片29および係止爪30を設け、さらに表板27の中央部に内周縁が後方に縁立つ開口31を設けることによって構成されている。32は表扉部材26の下部に嵌合して該表扉部材26の係止爪30によって保持される裏扉部材で、裏板33の上部中央部と、両側部と、下部に前方に折曲する折曲片34を設け、かつ裏板33の上部両側部から立上る押さえ片35を設けるとともに両押さえ片35からさらに後方に折曲するリンク金具取付用折曲片36を設けることによって構成されている。なお、裏扉部材32の両側には係止爪30の一つが挿入可能な係止爪挿入孔37が設けられている。38は表扉部材26の折曲片29および開口31の縁立部と、裏扉部材32の上部折曲片34および押さえ片35との間に介装固定されたガラス板、39は表扉部材26の上部を貫通して設けられ

たねじで、表扉27から飛び出した部分に把手40が取付けられている。41は裏扉部材32を貫通して設けられたリンク軸で、扉25はこのリンク軸41を介して調理室9の前部開口に取付けられている。なお、42はリンク軸41に介装されるばねで、扉25を閉じる方向に付勢する働きをなすものである。

このような構成で、次に組立て手順について述べる。

先ず、表扉部材26にねじ39を介して把手40を取付ける。次に、裏扉部材32にばね42を介装したりリンク軸41を貫通して設ける。次に、表扉部材26の折曲片29と開口31の縁立部の間にガラス板38を挿入し、この状態でガラス板38を裏扉部材32の上部折曲片34で支持し、かつ押さえ片35で押さえる。そして、表扉部材26の下部に嵌合した裏扉部材32を表扉部材26の係止爪30を抱き込むように折曲することによって裏扉部材32の係止を完了する。これにより、ガラス板38は、前面と上端部および両側部を表扉部材26で規制され、後面の両側下部と下端部を裏扉部材32で規制される。したがって、

確実、強固に固定される。

このように本実施における扉25の構成によると、裏扉部材32はガラス板38の下部のみを覆うのに必要な材料があればよいので、従来のものに比べ安価に製作できる。また、表扉部材26でガラス板38を覆うように構成しているので、表扉部材26を薄くしてもガラス板38の強度で補強されるため、その結果、表扉部材26も安価に製作できる。また、裏扉部材32はガラス板38の下部のみを支持しているので、表扉部材26の開口31は、裏扉部材32に関係なく広げることができ、ガラス板38の透視面積を広げることができる。したがって、調理室9内がよく見えるように構成することができる。

#### 発明の効果

以上のように本発明によれば、裏扉部材の開口を広くとつても強度上の心配がなく、また裏扉部材によりガラスの透視面積が減少されることもないので、広い透視面積が取れ、調理室内を見やすくすることができる。しかも、表扉部材はガラス板により補強されるので、薄くすることができ、

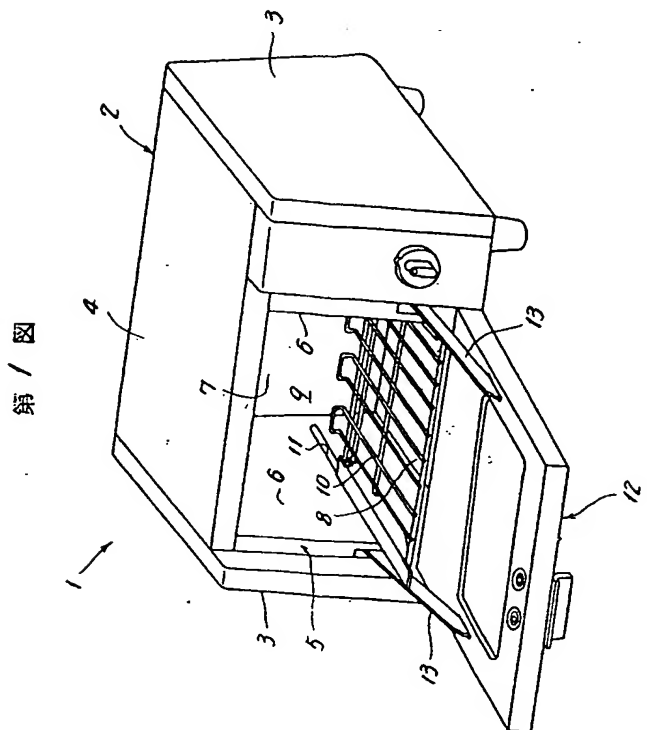
また裏扉部材もガラス板の下部のみを覆っているだけであるので、それぞれ少ない材料で構成することができる。したがって、安価に扉を製作することができる。

#### 4. 図面の簡単な説明

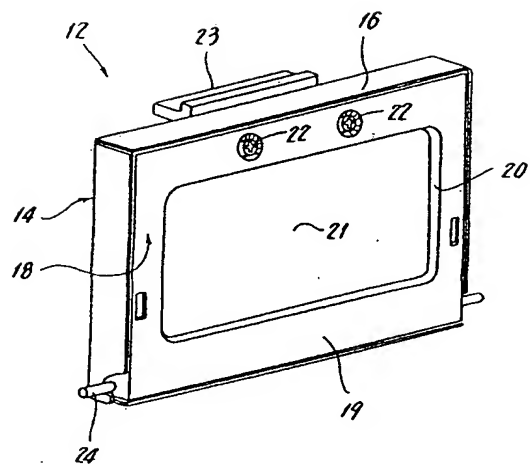
第1図～第3図は従来例を示し、第1図は調理器の全体外観斜視図、第2図は扉の斜視図、第3図は同断面図、第4図～第7図は本発明の一実施例を示し、第4図は調理器の全体外観斜視図、第5図は扉の斜視図、第6図は同断面図、第7図は同分解斜視図である。

1…調理器、9…調理室、25…扉、26…表扉部材、27…表板、28…外周枠、29…折曲片、30…係止爪、31…開口、32…裏扉部材、33…裏板、34…折曲片、35…押さえ片、38…ガラス板、41…リンク軸

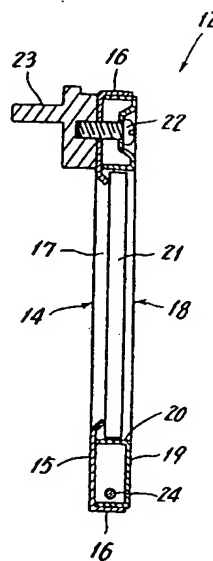
代理人 森 本 義 弘



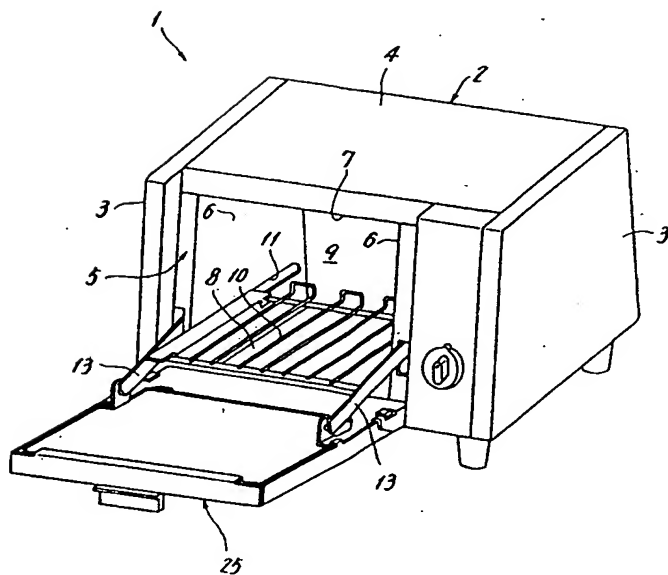
第 2 図



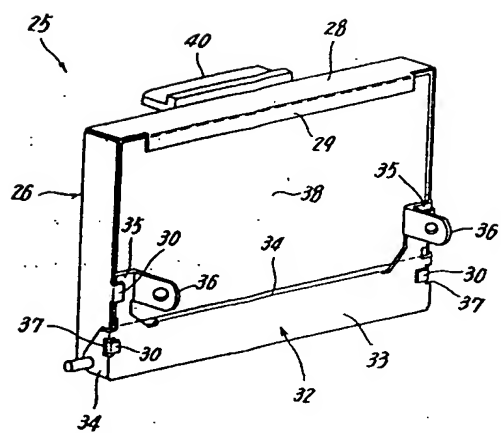
第 3 図



第 4 図



第 5 図



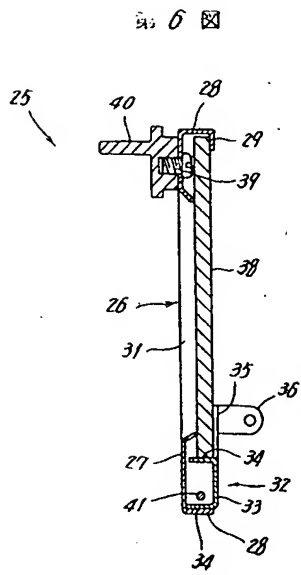
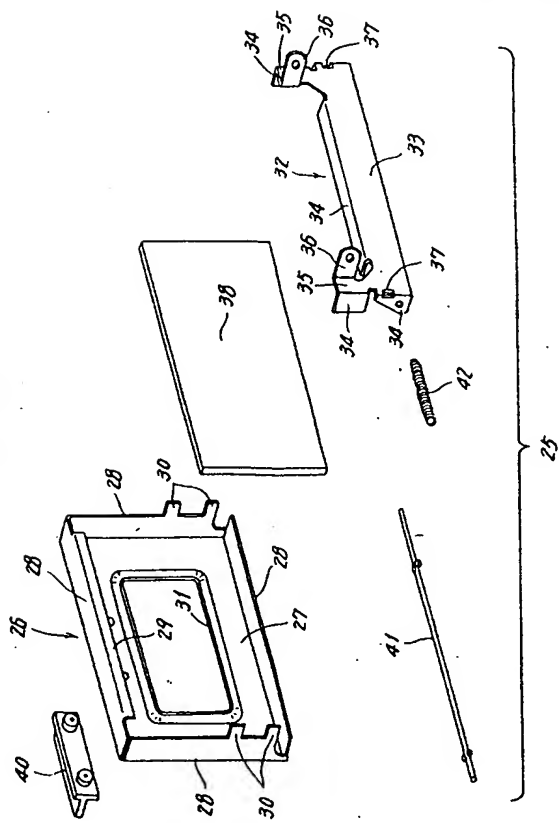


図 7



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